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RESULTS OF RANGE FINDING TOXICOLOGICAL TESTS ON BROMOFORM		
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BROMOFORM (75-25-2)		

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Biochemical Research Laboratory

The Dow Chemical Company

RESULTS OF RANGE FINDING, TOXICOLOGICAL  
TESTS ON BROMOFORM

Signed K. J. Olson, Mar. 6, '61

Checked F. Ogden 3-6-61

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PROBLEM

86-870002/53

Bromoform was submitted for toxicological investigation and definition of industrial handling hazards.

CONCLUSIONS

Bromoform possesses a low acute oral toxicity. There should be no problem from ingestion incidental to industrial handling.

Undiluted bromoform is only slightly irritating to the eye. Direct contact might be somewhat discomforting but would likely produce no more than a slight conjunctivitis which would be expected to subside within a day or two. Minimal eye protection is recommended for industrial handling.

Undiluted Bromoform should not present a serious hazard from the standpoint of skin contact irritation. In cases of exposed skin areas like the hands repeated prolonged contact would likely produce no more than slight hyperemia. Under conditions where it might be confined to the surface as exemplified by contaminated gloves, socks, or clothing in general, prolonged contact might result in some skin redness and repeated prolonged contact would probably burn. Such exposure should be avoided. Generally speaking, reasonable care and cleanliness should avert skin irritation incidental to industrial handling. Abraded skin should be protected.

Results of skin absorption tests conducted in the laboratory on rabbits

CONCLUSIONS (CONTINUED)

indicate that bromoform possesses a low order of toxicity by this route, however, there should be no problem from skin absorption incidental to industrial handling. Prolonged, repeated contact should be avoided.

Bromoform presents a definite problem from the standpoint of vapor inhalation. Vapor concentrations which might well be dangerous to life in a short time are readily attainable under conditions of room temperature. The vapors in concentrations sufficient to cause systemic injury are probably not irritating to the eyes and nose. Exposure to the vapors of Bromoform should be avoided. The material should be handled under a hood or in a well ventilated area. For cleaning up accidental spills it is recommended that a full face gas mask equipped with a suitable canister be used in well ventilated areas or a self contained breathing apparatus be used in poorly ventilated areas.

These conclusions are based upon range finding toxicological tests and are limited to precautions for industrial handling of the material. Development of specific uses will require consideration of the health problems presented and of the need for further toxicological studies.

SUMMARY OF RANGE FINDING TOXICOLOGICAL DATA

Acute Oral Toxicity

<u>Animal</u>	<u>Preparation Fed</u>	<u>Dose (g./kg.)</u>	<u>No.Died No.Fed</u>	<u>Response-Remarks</u>
Rat	10% solution in corn oil	1.0	0/2	Extensive liver injury and some kidney injury observed at autopsy.
Rat	10% solution in corn oil	2.0	2/2	Extensive liver and kidney injury observed at autopsy.

Eye Contact - Rabbit

<u>Material</u>	<u>Treatment</u>	<u>Response-Remarks</u>
Undiluted	Washed and unwashed	Slight conjunctivitis only, subsided in 48 hours to 1 week.



Skin Absorption - Rabbit (Cuff Technique)

<u>Material</u>	<u>Duration of Exposure</u>	<u>Dose (g./kg.)</u>	<u>No. Died</u> <u>No. Exposed</u>	<u>Response-Remarks</u>
Undiluted	24 hrs.	2.0	0/2	One animal lost weight. Slight hyperemia, edema and necrosis upon removal of cuff. Animals were drowsy.

Skin Contact - Rabbit

<u>Material</u>	<u>Condition of Skin</u>	<u>No. of Appl.</u>	<u>Site</u>	<u>Response-Remarks</u>
Undiluted	Intact	9	Ear	Slight sporadic hyperemia with slight exfoliation.
Undiluted	Intact	2	Belly	Slight hyperemia followed first application. Slight hyperemia, moderate edema and necrosis followed second. Skin healed with moderate scab and scar in 21 days.
Undiluted	Abraded	2	Belly	Essentially same as above with extensive scab and scar in 21 days.

Inhalation (Saturated Atmosphere)

<u>Animal</u>	<u>Bath Temperature</u>	<u>Hours Exposed</u>	<u>No. Died</u> <u>No. Treated</u>	<u>Response-Remarks</u>
Rat	Room	0.5	0/3	Animals drowsy when removed from chamber, some liver and kidney injury at autopsy.
Rat	Room	1.0	4/4	Animals alive when removed from chamber 3 days 15 minutes after.

EYE CONTACT	<input checked="" type="checkbox"/> If the eyes are contaminated, they should be flushed immediately with copious amounts of flowing water for at least 15 minutes. <input checked="" type="checkbox"/> Medical attention should be obtained if irritation persists or develops after washing of the eyes. <input type="checkbox"/> Medical attention should be obtained. <input type="checkbox"/> MEDICAL ATTENTION SHOULD THEN BE OBTAINED WITHOUT DELAY.
SKIN CONTACT	<input checked="" type="checkbox"/> Any injuries or irritations which may develop should receive medical attention. <input checked="" type="checkbox"/> Contaminated clothing and shoes should be removed and not re-used until thoroughly cleaned. <input checked="" type="checkbox"/> Wash contaminated skin with soap and plenty of water. <input type="checkbox"/> Contaminated clothing, including shoes, should be removed and the affected skin area should be washed thoroughly with soap and plenty of water. <input type="checkbox"/> Medical attention should then be obtained. <input type="checkbox"/> Contaminated clothing and shoes should not be re-used until thoroughly cleaned. <input type="checkbox"/> All contaminated clothing, including shoes, must be removed immediately and the affected skin area flushed thoroughly with water from a safety shower, or other suitable device and cleansed with soap and plenty of water. <input type="checkbox"/> MEDICAL ATTENTION MUST THEN BE OBTAINED AS RAPIDLY AS POSSIBLE. <input type="checkbox"/> Contaminated clothing including shoes, must not be re-used until thoroughly cleaned or must be discarded.
INHALATION	<input checked="" type="checkbox"/> If a person should experience any noticeable ill effects from breathing the vapor or fumes of this material, medical attention should be obtained promptly. <input checked="" type="checkbox"/> If a person should be overcome from breathing this material, he should be removed to fresh air at once, be made to rest, kept warm, and MEDICAL ATTENTION SHOULD BE OBTAINED IMMEDIATELY. If breathing stops, artificial respiration should be administered.
INGESTION	<input type="checkbox"/> If appreciable amounts of material are swallowed, vomiting should be induced by tickling the back of the tongue with the finger or by giving an emetic such as 2 tablespoonsful of table salt in a glass of warm water. Medical attention should then be obtained. <input type="checkbox"/> If the material is swallowed, vomiting must be induced by tickling the back of the tongue with the finger or by giving an emetic such as 2 tablespoonsful of table salt in a glass of warm water. MEDICAL ATTENTION SHOULD THEN BE OBTAINED WITHOUT DELAY

COMMENTS:

CW

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